# LAMBERT HOUSES PARCEL 5
# 2080 AND 2082 BOSTON ROAD
## BRONX, NEW YORK
## Vapor Intrusion Evaluation Work Plan

**NYSDEC BCP Site No: C203136**
**AKRF Project Number: 190247**

**Prepared for:**

New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau B
625 Broadway, 12th Floor
Albany, New York 12233

**On Behalf of:**

Boston Tremont Housing Development Fund Corporation
2080 Boston Road Housing Development Fund Corporation
2080 Boston Road Associates, LLC
Boston Tremont Apartments, LLC
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**MAY 2024**

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# APPENDICES

# 1.0 INTRODUCTION

This Vapor Intrusion Evaluation (VIE) Work Plan (VIEWP) describes the procedures to be used during the VIE, which will be performed to evaluate the need for activation of either of the two separate passive sub-slab depressurization systems (SSDSs) installed at the "Lambert Houses Parcel 5" project site, located at 2080 and 2082 Boston Road in the Bronx, New York (hereinafter referred to as the "Site"). The Site is identified on the New York City Tax Map as Bronx Borough Block 3140, Lot 7. The Site was remediated under the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) (Site No. C203136) to a combination of Track 1 Unrestricted Use Soil Cleanup Objectives (UUSCOs) in the northwestern portion of the Site, and Track 4 Restricted Residential Soil Cleanup Objectives (RRSCOs) for the remainder of the Site.

This VIEWP describes the procedures to be used during the VIE, which will include collection of sub-slab soil vapor and co-located indoor air samples to determine whether vapor concentrations necessitate active operation of one or both of the SSDSs installed at the Site to prevent contaminated vapors from entering the Site buildings (two total). The results of the VIE will be documented in a VIE Report, which will evaluate Site-specific data via the New York State Department of Health (NYSDOH) Decision Matrices to determine whether actions are necessary to address potential exposure to soil vapor intrusion into the new building. All work will be completed in accordance with this VIEWP and the Health and Safety Plan (HASP) included as Appendix D of the DEC-approved Site Management Plan (SMP) dated December 2023.

# 2.0 SITE DESCRIPTION AND HISTORY

## 2.1 Site Description and Surrounding Land Use

The Site is located in the County of the Bronx, New York, and is identified as Block 3140 and Lot 7 on the New York City (NYC) Tax Map. The approximately 1.827-acre Site is bounded by East 180th Street to the north, followed by River Park and the Bronx Zoo; the Bronx River to the east, followed by River Garden and automotive, commercial, and industrial properties; residential buildings and East 179th Street to the south, followed by the elevated 2 and 5 Metropolitan Transit Authority (MTA) subway tracks; and Boston Road to the west, followed by residential apartment buildings.

The Site was redeveloped with a new 7- to 17-story residential building with landscaped areas and an approximately 6,680-square-foot detached one-story garage/storage building in the southern portion of the Site. The building contains approximately 279 units of affordable housing. The residential building includes a partial cellar in the northern portion of the Site for housing utilities (water room, electric room, detention tank, etc.). The Site is zoned residential (R-8/R7-1). The Site location is shown on Figure 1.

## 2.2 Site Geology, Hydrogeology, and Subsurface Characteristics

Based on an August 2019 survey of the Site by Montrose Surveying Co., LLP, the Site slopes down to the northeast and lies at elevations ranging from 14.48 feet to 29.67 feet above the North American Vertical Datum of 1988 (NAVD88).

Based on field observations during previous investigations, including AKRF's May 2021 Remedial Investigation (RI), the stratigraphy of the Site generally consisted of historic fill comprising sand, gravel, and silt with varying amounts of concrete, brick, and asphalt from surface grade to between 3 and 18 feet below ground surface (bgs). The fill was underlain by sand and silt with gravel or weathered bedrock observed at variable depths ranging from 2 to 18 feet bgs in the western portion of the Site, and approximately 3 to 15 feet bgs in the southern and eastern portions of the Site. Based on a March 2020 geotechnical investigation conducted by Haley & Aldrich of New York, bedrock was noted on-site at depths ranging from approximately 3 to 43 feet bgs. Bedrock was encountered at depths ranging from 3 to 8 feet bgs in the northwestern portion of the Site (Track 1 area) during the remedial action.

Based on Site-specific groundwater measurements collected during the RI, groundwater beneath the Site ranges from approximately 5.196 to 5.867 feet NAVD88 (or approximately 13.5 to 14 feet bgs). Regionally, groundwater flows in a generally easterly direction toward the Bronx River, which is located east-adjacent to the Site.

## 2.3 Site History

Historic reports indicated that a portion of the Site was developed historically with the Metropolitan Dye Works, including a Benzine (petroleum distillate) House and a Mat Factory from 1896 to 1977, and the "United Metal Con'd Door and Sash Co. Inc." from 1915 to 1977. Certificates of Occupancy (COs) for the Site indicated a motor vehicle repair shop from 1949 to 1965, manufacturing in 1957, and a furniture repair and refinishing shop in 1962 and 1965. The surrounding area was historically developed with light manufacturing, dry cleaning, storage, and automotive uses.

# 3.0 FIELD PROGRAM

The field program will focus on collecting sub-slab soil vapor and co-located indoor air samples during the heating season. The VIE will include the collection of six sub-slab soil vapor samples and six co-located indoor air samples in the multi-story residential building; three sub-slab soil vapor and three co-located indoor air samples in the garage/storage building; and the collection of one ambient air sample from a central exterior location. The sub-slab soil vapor samples will be collected from the SSDS monitoring points (MPs) installed below each building's concrete foundation slab during the remedial action. The proposed sample locations for the residential building and the garage/storage building are shown on Figures 2A and 2B, respectively. Samples will be collected during a normal business day and unnecessary building ventilation will be avoided within 24 hours prior to sampling. All work will be implemented in accordance with the Quality Assurance Project Plan (QAPP), which is provided as Appendix A.

## 3.1 Pre-Sampling Survey

Prior to conducting the sampling, AKRF will perform a pre-sampling survey to gather information on: the Site building characteristics; air flow patterns; heating, ventilation, and air conditioning (HVAC); utilities; building operations; chemical and maintenance product inventory; and other known factors that may affect indoor air quality in the building. A photoionization detector (PID) with a parts per billion (ppb) detection range (e.g., ppbRAE 3000 or equivalent) will be used during the survey to screen for volatile organic compounds (VOCs) near windows, air supply vents, stored chemicals, and other potential sources. A NYSDOH Indoor Air Quality Questionnaire and Building Inventory form will be used to document the results of the survey. The NYSDOH form is included as Appendix B.

## 3.2 Sub-Slab Soil Vapor Sampling

Prior to sample collection at each building, the MP sampling points will be purged of approximately three sample volumes using a GilAir Plus low-flow air pump. During purging, a shroud will be placed over the sampling point and helium gas will be introduced through a small hole in the bucket to saturate the atmosphere around the sample port with helium gas. Purged vapors will be collected into a Tedlar™ bag and field-screened for organic vapors using a PID. The purged air will be monitored using a portable helium detector to check for short-circuiting of ambient air into the vapor sampling point. If the purged soil vapor contains greater than 10% helium, non-shrinking cement/grout will be used to enhance the surface seal, and the point will be retested.

Following purging and seal confirmation at each location, a soil vapor sample will be collected using the vacuum from the SUMMA® canister. Sub-slab soil vapor samples (RESI-MP-01 through RESI-MP-06 in the residential building and GR-MP-01 through GR-MP-03 in the garage/storage building) will be collected at each sub-slab location using a 6-Liter, batch-certified SUMMA® canister equipped with a vacuum gauge and flow regulator set to collect a 6-Liter sample over a 24-hour sampling period. Immediately after opening each flow control valve, the initial SUMMA® canister vacuum [inches of mercury (in. Hg)] will be noted. Conditions will be noted throughout the sampling period, including vacuum, potential sources of VOCs in the vicinity of the sampling location, and weather conditions. Once the vacuum reading on the flow controller reads between approximately -8 in. Hg and -2 in. Hg (after approximately 24 hours), the flow controller valve will be closed, the final vacuum will be noted, and the SUMMA® canister will be placed in a shipping carton for delivery to the laboratory. Sample locations are shown on Figures 2A and 2B.

## 3.3 Indoor Air Sampling

Indoor air samples RESI-IA-01 through RES-IA-06 in the residential building and GR-IA-01 through GR-IA-03 in the garage/storage building will be collected from locations adjacent to the sub-slab vapor sampling points as shown on Figures 2A and 2B, respectively. The samples will be

collected concurrently with the sub-slab vapor sampling using batch-certified, 6-Liter, SUMMA® canisters equipped with vacuum gauges and flow controllers calibrated to collect the sample over an approximately 24-hour period. The SUMMA® canisters will be placed at typical breathing zone height (approximately five feet above the floor) during collection. Immediately after opening the flow control valve, the initial SUMMA® canister vacuum (in. Hg) will be noted. Conditions will be noted throughout the sampling period, including vacuum of the samples and potential sources of VOCs in the vicinity of the sampling locations. Once the vacuum reading on the flow controller reads between approximately -8 in. Hg and -2 in. Hg (after approximately 24 hours), the flow controller valve will be closed, the final vacuum will be noted, and the SUMMA® canister will be placed in a shipping carton for delivery to the laboratory.

### 3.4 Ambient Air Sampling

One ambient (outdoor) air sample will be collected from an exterior location; the proposed location is shown on Figure 2A. The actual ambient air sample location will be determined during the pre-sampling survey (Section 3.1) based on weather conditions and any work or other activities nearby. The ambient air sample will be collected concurrently with the sub-slab vapor and indoor air samples in a batch-certified 6-Liter SUMMA® canister equipped with a vacuum gauge and flow controller calibrated to collect the sample over an approximately 24-hour period. The SUMMA® canister will be placed at typical breathing zone height (approximately five feet above the ground) during collection. Immediately after opening the flow control valve, the initial SUMMA® canister vacuum (in. Hg) will be noted. Conditions will be noted throughout the sampling period, including vacuum of the samples and potential sources of VOCs in the vicinity of the sampling locations. Once the vacuum reading on the flow controller reads between approximately -8 in. Hg and -2 in. Hg (after approximately 24 hours), the flow controller valve will be closed, the final vacuum will be noted, and the SUMMA® canister will be placed in a shipping carton for delivery to the laboratory.

### 3.5 Laboratory Analysis

Samples will be shipped to the laboratory with a chain of custody (COC). The sub-slab soil vapor, indoor air, and ambient air samples will be analyzed for VOCs by Environmental Protection Agency (EPA) Method TO-15 by a NYSDOH Environmental Laboratory Accreditation Program (ELAP)-certified laboratory with Category B deliverables and will be validated by a third-party prior to electronic data deliverable (EDD) submission to NYSDEC via EQuIS™.

# 4.0 REPORTING REQUIREMENTS

## 4.1 Vapor Intrusion Evaluation Report (VIER)

Upon completion of field work and receipt of laboratory analytical results, a VIER will be prepared in compliance with Section 3.14 of DER-10. The VIER will include: a description of investigation and sampling methods; a presentation of the field and laboratory analytical results; field data sheets, the pre-sampling inspection form, and laboratory analytical reports as attachments; and an interpretation of the findings and recommendations regarding the need to activate the SSDS. The results of the sampling will be presented relative to the NYSDOH Soil Vapor Intrusion Guidance matrices.

### 4.1.1 Description of Field Activities

The field activities section of the VIER will describe the field methods used, including sampling techniques and field screening equipment.

### 4.1.2 Soil Vapor, Indoor Air, and Ambient Air Assessment

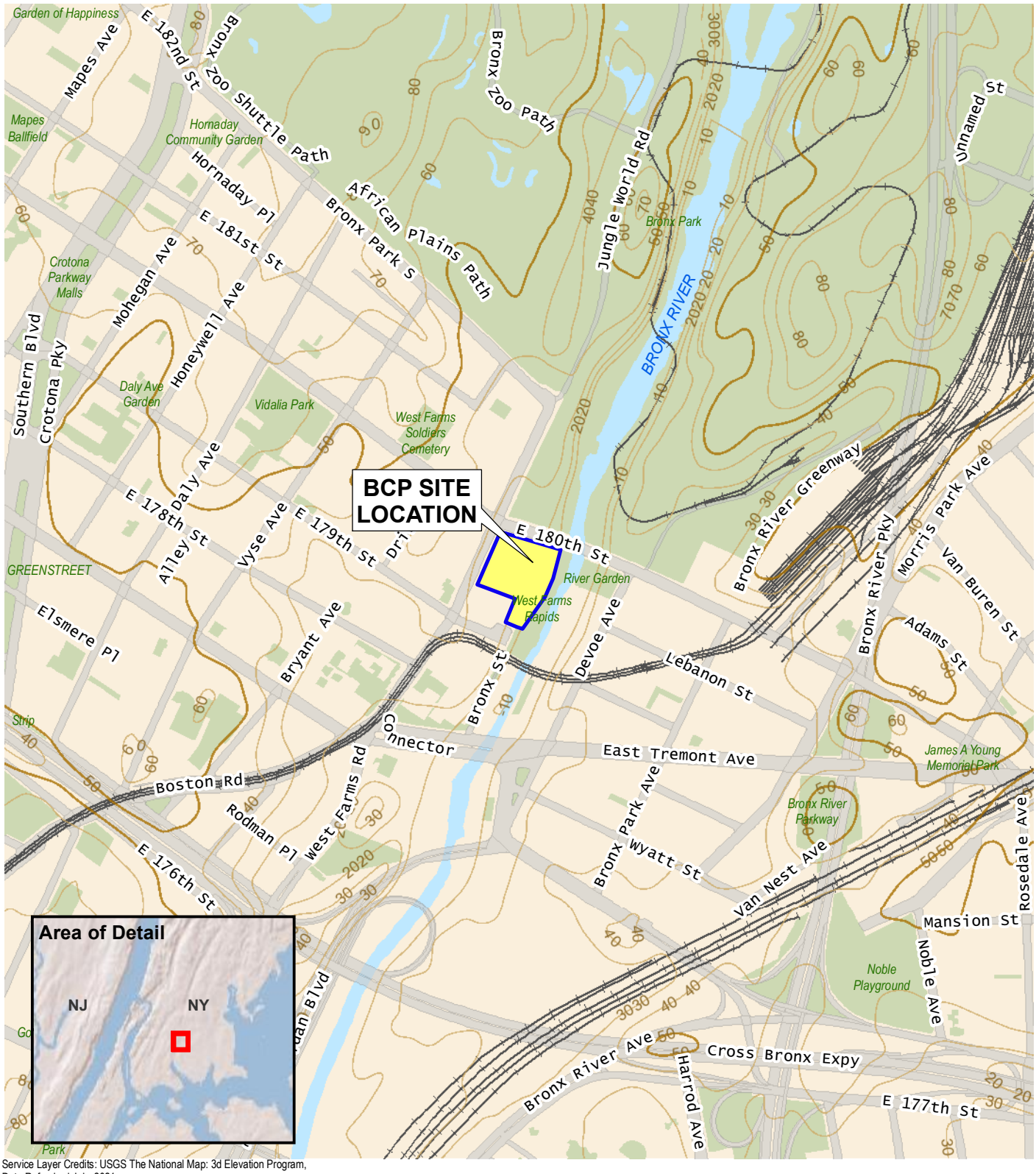
The VIER will include a section that presents field and laboratory data. Figures will be provided that illustrate the sampling locations. Field and laboratory analytical results will be presented in the body of the report, summarized in tables and figures, and the detected concentrations will be compared to regulatory standards and/or guidance values. Sampling logs and laboratory analytical reports will be provided as attachments.

# 5.0 CERTIFICATION

I, Deborah Shapiro, QEP, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Vapor Intrusion Evaluation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

| Deborah Shapiro, QEP |  | 5/24/2024 |
|---|---|---|
| Name | Signature | Date |

# FIGURES




Service Layer Credits: USGS The National Map: 3d Elevation Program, Data Refreshed July, 2021



AKRF
440 Park Avenue South, New York, NY 10016

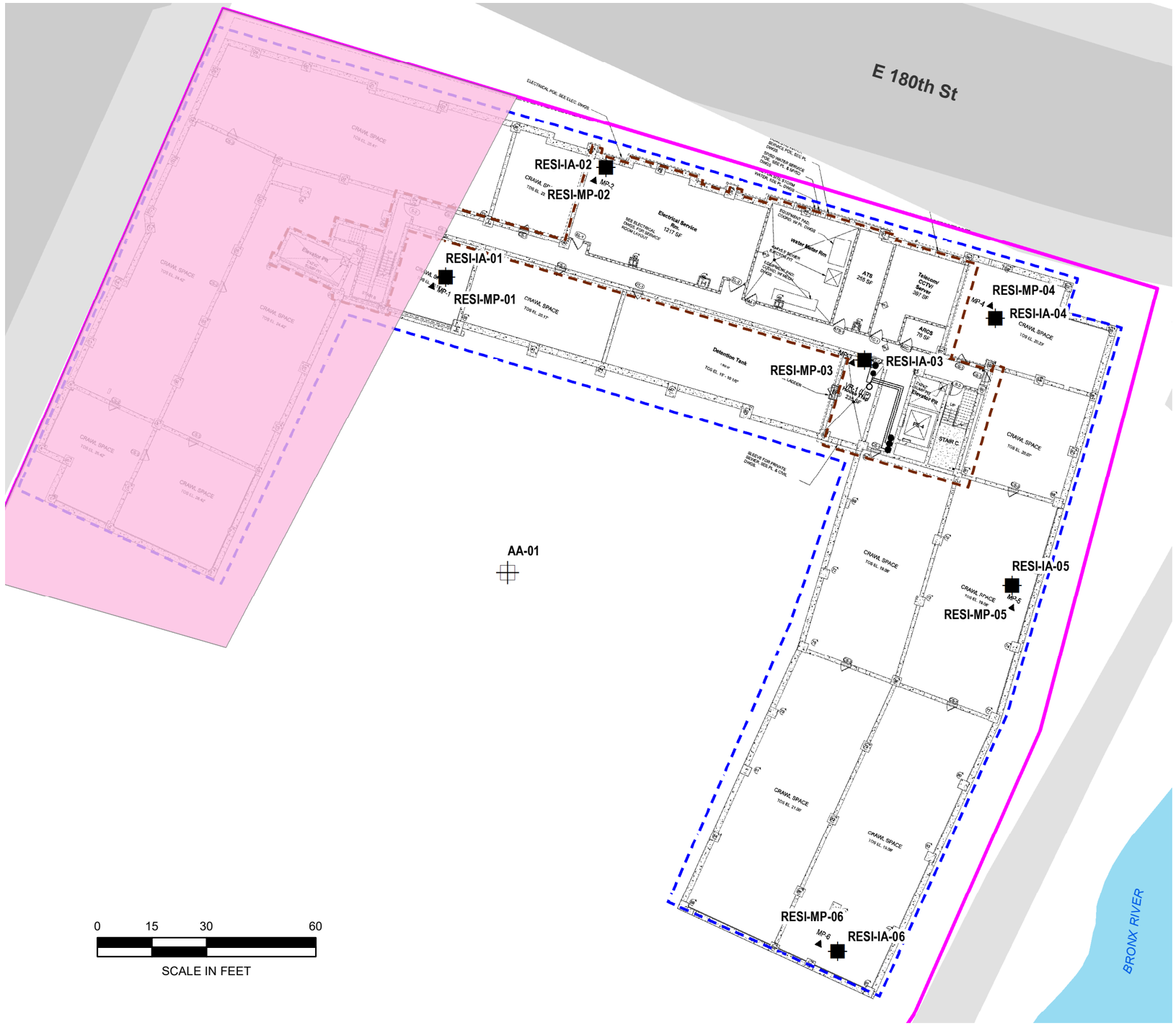
**Lambert Houses Parcel 5**
**Block 3140, Lot 7**
Bronx, New York

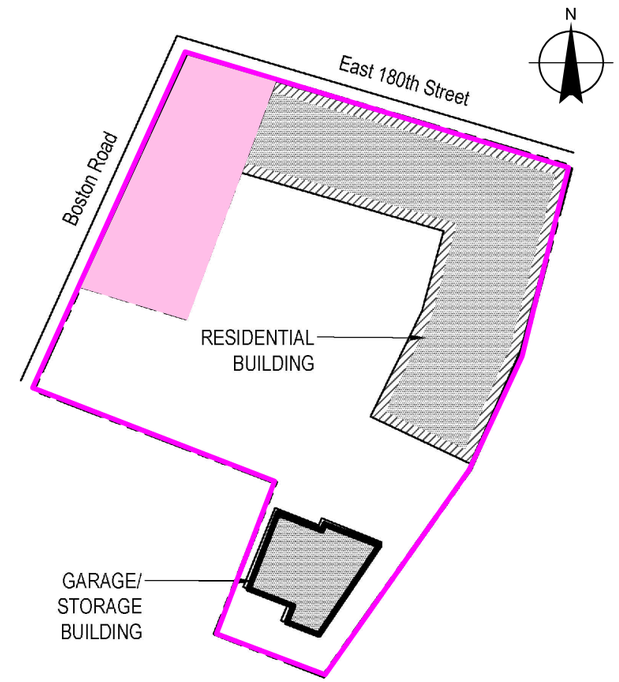
**BCP SITE LOCATION**

DATE
**10/25/2023**

PROJECT NO.
**190247**

FIGURE
**1**




**LEGEND**

- PROJECT SITE BOUNDARY
- TRACK 1 AREA
- MULTI-STORY RESIDENTIAL BUILDING FOOTPRINT
- CELLAR FOOTPRINT
- INDOOR AIR SAMPLE LOCATION (CO-LOCATED WITH THE SUBSLAB SOIL VAPOR SAMPLE LOCATION)
- AMBIENT AIR SAMPLE LOCATION
- SOILID 4" SCHEDULE 40 PVC PIPE
- VR-1 — VERTICAL RISER LOCATION WITH INDENTIFICATION
- VR-1 (UP) / VR-1 (DOWN) — PIPE OFFSET
- MP-1 — MONITORING POINT LOCATION WITH ID/SUB-SLAB SOIL VAPOR SAMPLE LOCATION

0 15 30 60

SCALE IN FEET

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database



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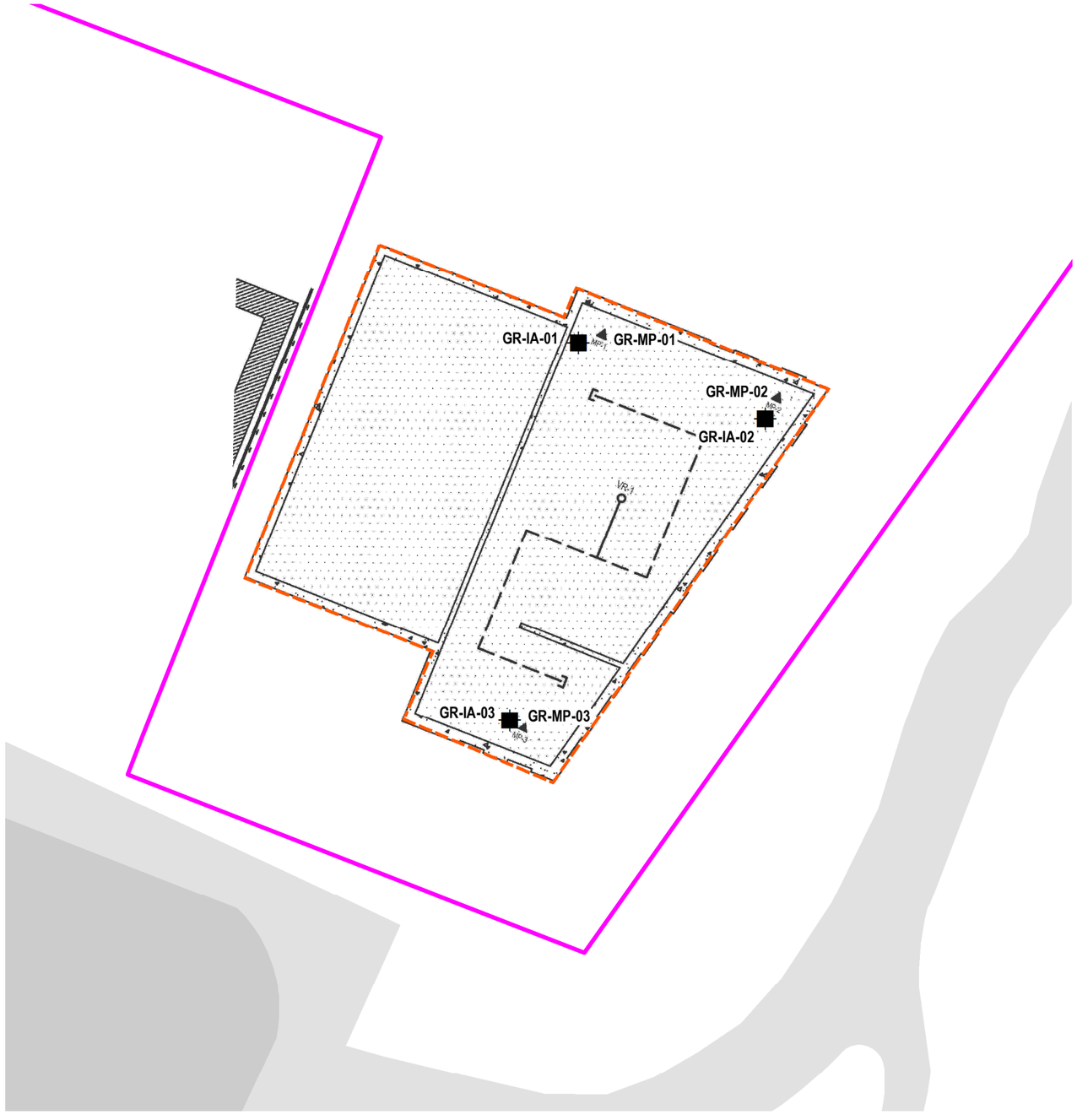
**Lambert Houses Parcel 5**
**Block 3140, Lot 7**
Bronx, New York

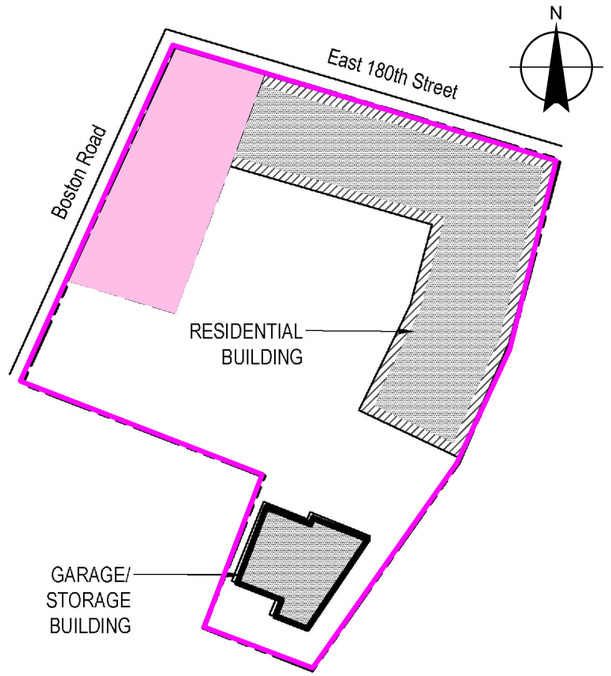
# PROPOSED VAPOR INTRUSION EVALUATION SAMPLING LOCATIONS IN THE RESIDENTIAL BUILDING

DATE
**4/3/2024**

PROJECT NO.
**190247**

FIGURE
**2A**




**KEY MAP**

**LEGEND**

- PROJECT SITE BOUNDARY
- ONE STORY GARAGE/STORAGE BUILDING
- INDOOR AIR SAMPLE LOCATION (CO-LOCATED WITH THE SUBSLAB SOIL VAPOR SAMPLE LOCATION)
- TRACK 1 AREA
- SOLID SCHEDULE 40 4" PVC PIPE BENEATH SLAB
- SLOTTED SCHEDULE 40 4" PVC PIPE BENEATH SLAP WITH ENDCAP
- VR-1 — VERTICAL RISER PENETRATION LOCATION WITH ID
- MP-1 — MONITORING POINT LOCATION WITH ID/SUB-SLAB SOIL VAPOR SAMPLE LOCATION

0 10 20 40

SCALE IN FEET

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database

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**Lambert Houses Parcel 5**
**Block 3140, Lot 7**
Bronx, New York

**PROPOSED VAPOR INTRUSION EVALUATION SAMPLING LOCATIONS IN THE GARAGE/STORAGE BUILDING**

DATE
**4/3/2024**

PROJECT NO.
**190247**

FIGURE
**2B**

# APPENDIX A
# QUALITY ASSURANCE PROJECT PLAN (QAPP)

# LAMBERT HOUSES PARCEL 5
# 2080 AND 2082 BOSTON ROAD
## BRONX, NEW YORK

# Quality Assurance Project Plan

**AKRF Project Number: 190247**
**BCP Site Number: C203136**

**Prepared for:**

New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau B
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**MAY 2024**

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# IN-TEXT TABLES



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# 1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) describes the protocols and procedures that will be followed during the environmental sampling conducted in accordance with the Vapor Intrusion Evaluation (VIE) Work Plan (VIEWP) at the Lambert Houses Parcel 5 site, hereafter referred to as the "Site". The Site is an approximately 1.827-acre property located at 2080 and 2082 Boston Road in the Bronx, New York. The Site is identified on the New York City Tax Map as Bronx Borough Tax Block 3140, Lot 7. The Site was remediated under the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) (Site No. C203136) to a combination of Track 1 Unrestricted Use Soil Cleanup Objectives (UUSCOs) in the northwestern portion of the Site, and Track 4 Restricted Residential Soil Cleanup Objectives (RRSCOs) for the remainder of the Site.

The objective of this QAPP is to provide Quality Assurance (QA) and Quality Control (QC) for the sampling conducted under the NYSDEC-approved VIEWP. Adherence to this QAPP will ensure that defensible data will be obtained during the environmental work completed at the Site.

# 2.0 PROJECT TEAM

The project team will be drawn from AKRF professional and technical personnel, and AKRF's subcontractors. All field personnel and subcontractors will have completed a 40-hour training course and updated 8-hour refresher course that meet the Occupational Safety and Health Administration (OSHA) requirements of 29 CFR Part 1910. The following sections describe the key project personnel and their responsibilities.

## 2.1 Remedial Engineer

Ms. Rebecca A. Kinal, P.E. will serve as the remedial engineer for the VIEWP. Ms. Kinal's resume is included in Attachment A.

## 2.2 Quality Assurance/Quality Control (QA/QC) Officer

Ms. Deborah Shapiro, QEP will serve as the QA/QC officer for the VIEWP. As the QA/QC officer, Ms. Shapiro will be responsible for adherence to this QAPP and will review the procedures with all personnel prior to commencing any fieldwork and will conduct periodic Site visits to assess implementation of the procedures. Ms. Shapiro's resume is included in Attachment A.

## 2.3 Project Manager/Project Director

Mr. Ashutosh Sharma will serve as the project manager/project director for the VIEWP. Mr. Sharma will be responsible for directing and coordinating all elements of the VIEWP. The project manager will prepare reports and participate in meetings with the Site owner/Volunteer, and/or the NYSDEC. As project director/project manager, Mr. Sharma will also be responsible for the general oversight of all aspects of the project, including scheduling, data management, and field program decision-making. The project manager/project director will communicate regularly with all members of the AKRF and NYSDEC project teams to ensure a smooth flow of information between involved parties. Mr. Sharma's resume is included in Attachment A.

## 2.4 Field Team Leader/Technician, Site Safety Officer (SSO), and Alternate

The field team leader will be responsible for supervising the daily sampling and health and safety activities in the field, and will ensure adherence to the work plan and Health and Safety Plan (HASP), included in Appendix D of the NYSDEC-approved Site Management Plan (SMP). The field team leader will also act as the field technician and Site safety officer (SSO), and will report to the project manager/project director regarding the work progress and any deviations from the work plan. The field team leader will be a qualified and responsible person able to act professionally and promptly during environmental work at the Site. Mr. Stephen Schmid will be the field team leader. The field team leader alternate is Madelyn Fleming of AKRF. Mr. Schmid's and Ms. Fleming's resumes are included in Attachment A.

## 2.5 Laboratory Quality Assurance/Quality Control (QA/QC) Officer

The laboratory QA/QC officer will be responsible for quality control procedures and checks in the laboratory and ensuring adherence to laboratory protocols. The laboratory QA/QC officer will track the movement of samples from the time they are checked in at the laboratory to the time that analytical results are issued, and will conduct a final check on the analytical calculations and sign off on the laboratory reports. The laboratory QA/QC officer will be Melissa Haas of Eurofins Environment Testing America (Eurofins) of Edison, New Jersey, the New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)-certified laboratory being employed for the sampling to be conducted at the Site.

## 2.6 Laboratory Data Validator

The laboratory data validator will be responsible for third party data validation and preparation of DUSRs. The third-party laboratory data validator will be Lori Beyer of L.A.B. Validation Corp.

# 3.0 STANDARD OPERATING PROCEDURES (SOPS)

The following sections describe the SOPs for the sampling activities included in the VIEWP. During these operations, safety monitoring will be performed as described in the HASP, included as Appendix D of the NYSDEC-approved SMP.

## 3.1 Sampling Equipment Decontamination

No drilling work is expected or planned during the sampling. However, if required, all drilling and sampling equipment will be either dedicated or decontaminated between sampling locations. Decontamination will be conducted to prevent discharge to the ground. The decontamination procedure will be as follows:

1. Scrub using tap water/Alconox® mixture and bristle brush.
2. Rinse with tap water.
3. Scrub again with tap water/Alconox ® mixture and bristle brush.
4. Rinse with tap water.
5. Rinse with distilled water.
6. Air-dry the equipment, if possible.

## 3.2 Management of Investigation-Derived Waste (IDW)

IDW (if any) will be containerized in New York State Department of Transportation (NYSDOT)-approved 55-gallon drums or disposed of via tri-axel trucks during excavation activities. The drums will be sealed at the end of each workday and labeled with the date, the excavation grid(s), the type of waste, and the name and phone number of an AKRF point of contact. All IDW exhibiting field evidence of contamination will be disposed of or treated according to applicable local, state, and federal regulations.

# 4.0 SAMPLING AND LABORATORY PROCEDURES

## 4.1 Soil Vapor Sampling

Soil vapor sampling will be conducted in accordance with New York State Department of Health (NYSDOH) Final Guidance on Soil Vapor Intrusion, October 2006. Samples will be collected in batch-certified SUMMA® canisters.

## 4.2 Laboratory Methods

Eurofins Environment Testing America of Edison, New Jersey, a NYSDOH ELAP-certified laboratory subcontracted to AKRF, will be used for all chemical analyses in accordance with the Division of Environmental Remediation (DER)-10 2.1(b) and 2.1(f) with Category B Deliverables. Table 1 summarizes the laboratory methods that will be used to analyze field samples and the sample container type, preservation, and applicable holding times.

**Table 1**
**Laboratory Analytical Methods for Analyte Group**

| Matrix | Analysis | EPA Method | Bottle Type | Preservative | Hold Time |
|---|---|---|---|---|---|
| Soil Vapor/Indoor Air/Ambient Air | VOCs | TO-15 | 6L SUMMA® Canister | None | 14 days |
| Notes:<br>EPA - Environmental Protection Agency<br>VOCs – volatile organic compounds | | | | | |

## 4.3 Sample Handling

### 4.3.1 Sample Identification

All samples will be consistently identified in all field documentation, chain of custody (COC) documents, and laboratory reports. All samples will be amended with the collection date at the end of the sample name in a year, month, day (YYYYMMDD) format. The samples collected from the vapor monitoring points (MPs) will be identified by the MP location; indoor air samples will be identified by prefix "IA" followed by the sample number; and the ambient air sample will be identified by the prefix "AA". All samples collected from the residential building will be identified by the prefix "RESI" and samples collected from the garage/storage building will be identified by the prefix "GR". Table 2 provides examples of the sampling identification scheme for the samples.

**Table 2**
**Sample Nomenclature**

| Sample Description | Sample Designation |
|---|---|
| Soil vapor sample collected from MP-2 located in the residential building on May 10, 2024 | RESI-MP-2_20240510 |
| Indoor Air sample collected adjacent to garage/storage building MP-3 on May 10, 2024 | GR-IA-03_20240510 |
| Ambient air sample collected on May 10, 2024 | AA-01_20240510 |

*Sample Labeling and Shipping*

All sample containers will be provided with labels containing the following information:

- Project identification, including Site name, BCP Site number, Site address
- Sample identification
- Date and time of collection
- Analysis(es) to be performed
- Sampler's initials

The samples will be collected using laboratory-supplied SUMMA® canisters. The COC form(s) will be properly completed by the sampler in ink, and all sample shipment transactions will be documented with signatures, and the date and time of custody transfer. Samples will be shipped overnight (e.g., Federal Express) or transported by a laboratory courier. All containers shipped to the laboratory will be sealed with mailing tape and a COC seal to ensure that the samples remain under strict COC protocol.

*Sample Custody*

Field personnel will be responsible for maintaining the sample containers in a secured location until they are picked up and/or sent to the laboratory. The record of possession of samples from the time they are obtained in the field to the time they are delivered to the laboratory or shipped off-site will be documented on COC forms. The COC forms will contain the following information: project name; names of sampling personnel; sample number; date and time of collection and matrix; and signatures of individuals involved in sample transfer, and the dates and times of transfers. Laboratory personnel will note the condition of the custody seal and sample containers at sample check-in.

## 4.4 Field Instrumentation

Field personnel will be trained in the proper operation of all field instruments at the start of the field program. Instruction manuals for the equipment will be on file at the Site for referencing proper operation, maintenance, and calibration procedures. The equipment will be calibrated according to manufacturer specifications at the start of each day of fieldwork. If an instrument fails calibration, the project manager or QA/QC officer will be contacted immediately to obtain a replacement instrument. A calibration log will be maintained to record the date of each calibration, any failure to calibrate and corrective actions taken. The PID will be equipped with a 10.6 electron volt (eV) lamp and will be calibrated each day using 100 parts per million (ppm) isobutylene standard gas in accordance with the manufacturer's standards.

## 4.5 Quality Assurance (QA)

All laboratory analytical data will be reviewed by a third-party validator and a Data Usability Summary Report (DUSR) will be prepared to document the usability and validity of the data. The Vapor Intrusion Evaluation Report (VIER) will include a detailed description of the sampling activities, data summary tables, concentration map showing sample locations and concentrations, DUSR, and laboratory reports.

# ATTACHMENT A

## RESUMES OF REMEDIAL ENGINEER, QA/QC OFFICER, PROJECT MANAGER, PROJECT DIRECTOR AND FIELD TEAM LEADER AND ALTERNATE

# REBECCA KINAL, P.E.

**VICE PRESIDENT**

Rebecca Kinal has over 20 years of experience in the assessment and remediation of soil and groundwater contamination and other hazardous/non-hazardous waste problems. Ms. Kinal's experience includes environmental due diligence, soil and groundwater investigations, leaking underground storage tank studies, soil gas/vapor intrusion surveys, and oversight of small- and large-scale remediation programs, including design of groundwater remediation systems and vapor mitigation systems. She has directed numerous Phase I and Phase II investigations and remediation programs, many of them in conjunction with commercial/residential developers, law firms, lending institutions, and public agencies. She is experienced in the cleanup of contaminated properties under New York State Brownfield Cleanup Program (BCP) regulations and the New York City "E-designation" program. As a part of this work, her duties have included technical and report review, proposal writing, scheduling, budgeting, and acting as liaison between clients and regulatory agencies, and project coordination with federal, state, and local authorities.

## BACKGROUND

### Education

M.S., Hydrogeology, Rensselaer Polytechnic Institute, 1995

B.S., Civil Engineering, Lafayette College, 1992

### Licenses/Certifications

State of New York, P.E. Registration No. 082046, 2004

### Years of Experience

Year started in company: 2000

Year started in industry: 1996

## RELEVANT EXPERIENCE

**White Plains Mall/Hamilton Green**

Ms. Kinal managed environmental due diligence and remediation planning for the project, which included Phase I and II environmental assessments, a petroleum Spill investigation, preparation of remediation cost estimates, and application to the NYSDEC BCP.

**New York City School Construction Authority On-Call Contracts for Environmental Consulting Services, Various Sites, NY**

Ms. Kinal serves as the project manager for AKRF's on-call hazardous materials consulting contract with the New York City School Construction Authority for over 8 years. For potential new school sites, assignments include initial due diligence, Phase I environmental site assessments, (ESAs) and subsurface investigation of soil, groundwater, and soil vapor to determine the suitability of a site for development as a school, likely remediation requirements, and associated costs. For sites undergoing design and development, assignments include preparation of remediation plan, contract specifications, and design drawings. The work has also included conducting indoor air quality testing, vapor intrusion assessments, preparation of specifications, supervision of storage tank removals, and investigation and remediation of spills for existing schools. Due to the sensitivity of school sites, work under this contract is often conducted on short notice and during non-school hours.

**USTA National Tennis Center, Queens, NY**

AKRF prepared an EIS for the New York City Departments of City Planning (DCP) and Environmental Protection (DEP) as co-lead agencies to analyze the expansion of the National Tennis Center, which includes multiple improvements and construction projects at the USTA campus over several years. As part of the EIS requirements, AKRF prepared a Remedial Action Plan for implementation during the proposed project's construction. In accordance with the RAP, vapor mitigation systems were incorporated into the design for several of the proposed structures at the facility, including two new stadiums, a new transportation center, and several practice court facilities. Ms. Kinal prepared the specifications and design drawings for the vapor mitigation and is providing on-going construction support to review contractor submittals and inspect the vapor barrier and sub-slab depressurization system installations.

**Montefiore Medical Center, Various Locations, NY**

Ms. Kinal provides due diligence assistance to Montefiore Medical Center (MMC) for the ongoing expansion of their facilities, primarily in the Bronx and Westchester County. She conducts and manages environmental due diligence tasks related to their property transactions, including Phase I Environmental Site Assessments (ESAs), Phase II investigations, and geophysical surveys. She also assists MMC in making decisions with respect to environmental risk issues.

**Queens West Development Project, Long Island City, NY**

For over 20 years, AKRF has played a key role in advancing the Queens West development, which promises to transform an underused industrial waterfront property into one of largest and most vibrant mixed-use communities just across the East River from the United Nations. AKRF has prepared an Environmental Impact Statement that examines issues pertaining to air quality, land use and community character, economic impacts, historic and archaeological resources, and infrastructure. As part of the project, AKRF also undertook the largest remediation ventures completed to date under the NYSDEC Brownfields Cleanup Program (BCP). Ms. Kinal helped prepare the Remedial Work Plan (RWP) and oversaw the remediation of Parcel 9, a 1.8-acre former industrial site. Remediation includes installation of a sheet pile containment wall, excavation of coal tar- and petroleum-contaminated soil under a temporary structure to control odors during remediation, vapor mitigation for the future buildings, and institutional controls. Upon completion of the remediation activities, Ms. Kinal managed the preparation of a Final Engineering Report (FER) to document the clean-up activities. The NYSDEC issued a Certificate of Completion (COC) for the Parcel 9 site in December 2006. Ms. Kinal continues to oversee post-remediation monitoring and site management activities to ensure that the remedy remains in-place and effective.

**Roosevelt Union Free School District, Roosevelt, NY**

Ms. Kinal managed environmental investigation and remediation activities for the sites of three new elementary schools and a new middle school in Roosevelt, New York. Remediation activities include removal/closure of contaminated dry wells and underground petroleum storage tanks, and excavation and off-site disposal of petroleum- and pesticide-contaminated soil. Remediation of the new middle school site, which also included a sub-slab depressurization system, was conducted through coordination with the NYSDEC, NYSDOH, New York State Education Department (NYSED), and the local school district. Upon completion of the remediation and school construction, Ms. Kinal managed confirmatory indoor air testing and preparation of a Final Engineering Report to document the site clean-up. The NYSDEC issued a Certificate of Completion and the school was open for the Fall 2008 semester as planned.

**Proposed NYC Public School Campus, Bronx, NY**

Ms. Kinal provided environmental consulting services to the selected environmental remediation contractor for this former manufactured gas plant in the Mott Haven neighborhood of the Bronx, which was remediated under the NYSDEC BCP. These services included: preparation of an in situ sampling plan and excavation plan for waste

characterization and disposal; supervision of waste characterization sampling activities; development and implementation of a community air monitoring program during all remediation activities; and daily reporting to the NYC School Construction Authority.

**National Grid – Halesite Manufactured Gas Plant Site, Town of Huntington, NY**

Ms. Kinal served as the project manager for the remedial design and engineering work associated with remediation of National Grid's former manufactured gas plant (MGP) located in the Town of Huntington. The site is situated in a sensitive location along the waterfront, surround by commercial and residential properties, and half the property where the remediation was conducted is a steep slope. The remedy consisted of soil removal, oxygen injection, and non-aqueous phase liquid recovery. Ms. Kinal developed the remedial work plans, design/construction documents, and managed environmental oversight of the remedial work, including waste characterization and tracking, confirmatory endpoint sampling, air monitoring, and reporting to the NYSDEC. After the remediation work was completed, Ms. Kinal prepared appropriate close-out documentation in accordance with NYSDEC requirements.

**Shell Service Station, Millwood, NY**

Ms. Kinal planned and oversaw a Phase I Environmental Site Assessment and Phase II Subsurface Investigation of this active gasoline station in northern Westchester County. The Phase I/Phase II investigations were performed for the potential buyer of the property who wished to redevelop it with a more modern service station and convenience store. Ms. Kinal also prepared a conceptual remediation plan to address several areas of petroleum contamination identified during the Phase II. The plan, which was approved by NYSDEC, will be implemented in conjunction with the site redevelopment activities to achieve closure for several spills reported at the site.

**Pelham Plaza Shopping Center Site Investigation & Remediation, Pelham Manor, NY**

Ms. Kinal managed a Site Investigation at Pelham Plaza, an approximately ten-acre site that formerly contained a manufactured gas plant. The site was investigated under a voluntary clean-up agreement entered into with the NYSDEC by the site owner. The site investigation included advancing over 100 soil borings with continuous soil sampling to bedrock, installing monitoring and recovery wells, and conducting test pitting both indoor and outdoor locations to collect soil and groundwater samples and determine the extent of Non-Aqueous Phase Liquid (NAPL). The investigation also included: soil gas sampling to determine contaminant concentrations in the vapors beneath the foundation of an on-site retail store; sediment sampling in an adjacent creek to identify off-site impacts; and a tidal survey to determine tidal influence on groundwater levels at the site. Ms. Kinal also oversaw interim remedial measures, which include biweekly pumping of recovery wells to remove dense NAPL (DNAPL) from the site subsurface.

**Shaws Supermarket Redevelopment Project, New Fairfield, CT**

Ms. Kinal managed the Remedial Investigation (RI) for an approximately nine-acre shopping center site that was contaminated by releases from former dry cleaning operations. The site was being redeveloped with a new supermarket and separate retail stores. The investigation included the installation of monitoring wells in the intermediate overburden aquifer and bedrock aquifer, sampling of existing and newly installed wells, geophysical logging in bedrock wells, and pump testing in intermediate and bedrock wells. Ms. Kinal prepared a Remedial Action Work Plan (RAWP) based on results from the RI, which included a groundwater pump and treat system to contain a plume of perchlorethylene (PCE)-contaminated groundwater, and excavation and disposal of contaminated soil in the presumed source area. Following CTDEP approval of the RAWP, Ms. Kinal prepared bid specifications for soil excavation and remediation system installation, and oversaw their implementation. Ms. Kinal also prepared NPDES permit applications for discharges from construction dewatering and the groundwater remediation system, and conducted associated discharge monitoring.

**Yankee Stadium, Bronx, NY**

Ms. Kinal performed the hazardous materials analysis for the Draft Environmental Impact Statement for the proposed new Yankee Stadium. The analysis included a Phase I Environmental Site Assessment of the entire project area and Subsurface (Phase II) Investigation in areas where environmental conditions were identified. The Phase II investigation included geophysical surveys to search for potential underground storage tanks; and soil, soil gas, and groundwater sampling at over 40 locations to determine potential environmental impacts during and after the proposed construction. Ms. Kinal also developed an extensive community air monitoring plan and oversaw its implementation during deconstruction of the old Yankee Stadium.

**Avalon on the Sound, New Rochelle, NY**

Ms. Kinal oversaw environmental investigation and soil remediation during the construction of two luxury high-rise apartment buildings and an associated parking garage. Investigation activities included an electromagnetic survey to search for possible underground storage tanks, and subsurface sampling to characterize soil and groundwater. Remediation activities included removing underground storage tanks, excavating and disposing of soil contaminated with volatile and semi-volatile organic compounds, and collecting end-of-excavation confirmation samples.

**Davids Island Environmental Audit, New Rochelle, NY**

Ms. Kinal managed the hazardous materials portion of the audit of this undeveloped island site, including a Phase I Environmental Site Assessment (ESA) and Subsurface (Phase II) Investigation in areas where environmental conditions were identified. The Phase II investigation included collecting soil samples from more than 100 locations and analyzing them for targeted compounds, including volatile organic compounds, semi-volatile compounds, metals, pesticides, and polychlorinated biphenyls (PCBs). Ms. Kinal also oversaw an electromagnetic (EM) survey conducted to identify the location of suspected underground storage tanks on the island. Based on soil sample results, Ms. Kinal estimated the volume of contaminated soil requiring remediation and prepared cost estimates for soil excavation and for transportation and disposal of contaminated soil and hazardous materials.

**Outlet City Site Investigation, Queens, NY**

Ms. Kinal prepared a work plan for remedial investigation of the Outlet City site, a property in Long Island City that was formerly occupied by a manufacturer of industrial cleaners and pharmaceuticals. The site is being investigated and remediated under the NYSDEC voluntary clean-up program. In preparing the work plan, Ms. Kinal evaluated results from several previous investigations and conducted a limited groundwater sampling program to determine future data needs for designing remediation of creosote-contaminated soil and groundwater. The work plan included additional soil and groundwater sampling, a tidal survey to determine tidal influence on groundwater levels, and pilot free product recovery testing. Ms. Kinal also helped design a venting system for an on-site basement and performed exposure calculations for the vented vapors.

**Yonkers Waterfront Redevelopment Project, Yonkers, NY**

For this redevelopment along Yonkers' Hudson River waterfront, Ms. Kinal supervised the remediation of Parcels H and I that were contaminated with hazardous soil. During the remediation process, she reviewed the subcontractor health and safety plans, delineated the areas of excavation, and oversaw field activities to ensure compliance with the specifications and appropriate regulations. This property was remediated under the NYSDEC Environmental Restoration Program (ERP).

# DEBORAH G. SHAPIRO, QEP

**SENIOR VICE PRESIDENT**

Deborah Shapiro, QEP is a Senior Vice President with experience in the assessment and remediation of hazardous waste issues. Ms. Shapiro supervises project teams and manages all aspects of assessment and remediation projects. Ms. Shapiro works with developers, non-profit organizations, architects, local community groups, local businesses, and government agencies. Her projects fall under the regulatory oversight of New York State Department of Environmental Conservation (NYSDEC), New York City Department of Environmental Protection (NYCDEP), and New York City Office of Environmental Remediation (NYCOER) including the New York State Brownfield Cleanup Program (BCP), New York City Voluntary Cleanup Program (VCP), NYSDEC petroleum spills program, Resource Conservation and Recovery Act (RCRA)/Underground Injection Control (UIC) closures, and NYCOER's E-designation program. Ms. Shapiro has also assisted commercial and industrial property owners with maintaining the integrity of their portfolios by providing compliance related cleanup and chemical storage management services.

Ms. Shapiro manages all aspects of redevelopment projects from the initial Phase I ESA, Phase II, and remediation through post-remedial site management. In addition, her experience includes groundwater investigations, monitoring, and sampling programs; Brownfield and hazardous waste site investigations; In-Situ Chemical Oxidation; underground storage tank studies, including soil contamination delineation, classification, removal and disposal; waste characterization sampling; exposure assessments; on-going remedial action (especially air sparging (AS)/soil vapor extraction (SVE)), and permitting.

## BACKGROUND

### Education

MS, American University, Environmental Science, 2001
BA, American University, Environmental Studies, 1998

### Licenses/Certifications

Health and Safety Operations at Hazardous Materials Sites 29 CFR 1910.120
OSHA 10 Hour Construction Safety & Health Course
OSHA 40 Hour HAZWOPER
OSHA 8 Hour Refresher
OSHA 8 Hour Supervisor
Qualified Environmental Professional, Institute of Professional Environmental Practice

### Professional Memberships

Past President, New York City Brownfield Partnership,
Board Member, Residents Forward,
Member, Institute of Professional Environmental Practice,

### Years of Experience

22 years in the industry
7 years with AKRF

## RELEVANT EXPERIENCE

**New York City Office of Environmental Remediation, OER On Call Contract, Various Locations, NY**

The work has included conducting Phase I environmental site assessments (ESAs) and multi-media sampling of soil, groundwater, and soil vapor for various sites funded by EPA grants. The work plans and investigation reports were completed in accordance with OER and EPA requirements. AKRF also implemented a remedial plan for capping a

park site in Staten Island. In addition, AKRF provided support to OER and an affordable housing developer to expedite an application for entry into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP), as well as preparation and implementation of the remedial investigation and remedial plan.

As Project Manager, Ms. Shapiro is managing an on-call contract with the OER for brownfields environmental assessment and remediation.

**Brook 156 HDFC, Brook 156, Bronx, NY**

AKRF was retained to provide environmental consulting services in connection with the purchase and development of the Site. AKRF prepared a Phase I Environmental Site Assessment (ESA) of the NYC-owned former gasoline service station and a former railroad. A Tier 1 Vapor Encroachment Screening was also conducted to satisfy HUD's vapor intrusion requirements. AKRF prepared a Remedial Investigation Work Plan (RIWP) and conducted a Remedial Investigation (RI) at the site, which included the collection and analysis of soil, soil vapor, and groundwater. The results of the RI, which were documented in a Remedial Investigation Report (RIR), were used to prepare a New York City Brownfield Cleanup Program (NYCBCP) application. The site was accepted into the New York State Brownfield Cleanup Program (NYSBCP). AKRF prepared a Citizen Participation Plan (CPP), distributed public notices, and conducted multiple Remedial Investigations to further investigate soil, soil vapor, and groundwater at the site prior to redevelopment. The results of the investigations were used to prepare a Remedial Action Work Plan (RAWP), which is undergoing review and approval by NYSDEC. The proposed remedy includes excavation of soil, design and installation of a soil vapor extraction system and sub-slab depressurization system, contingent groundwater treatment program, and installation of a vapor barrier and composite cover system.

AS Project Manager, Ms. Shapiro is responsible for managing all technical components of the project, communication with NYSDEC and the Client, and managing the budget.

**Elton Crossing - Melrose Commons North Site C, Bronx, NY**

AKRF provided environmental consulting services in connection with the purchase and redevelopment of the Elton Crossing site at 899 Elton Avenue in the Bronx, NY. The work initially involved the preparation of a Phase II subsurface investigation including soil and soil vapor testing to determine if the site would be eligible for the New York State Brownfield Cleanup Program (NYSBCP). Upon completion of the investigation, AKRF prepared a NYCBCP Application and the site was accepted into the NYSBCP. AKRF managed all aspects of the brownfield cleanup including; development of Investigation Work Plans, performing Remedial Investigations and Reports, preparation of Phase I ESAs, preparation of a Citizen Participation Plan, distribution of public notices, preparation and implementation of a Remedial Action Work Plan (RAWP), design of a sub-slab depressurization system, preparation of the Final Engineering Report and Site Management Plan, and sampling and management of soil disposal. AKRF is in the midst of implementing the Site Management Plan.

As Project Manager, Ms. Shapiro was responsible for managing all technical components of the project, communication with NYSDEC and the Client, and managing the budget.

**Bradhurst Cornerstone II Residences, New York, NY**

AKRF, Inc. prepared a Part 58 Environmental Assessment (EA) and a NYC CEQR Environmental Assessment Statement for the Bradhurst Cornerstone II Apartments project. This project, which required conveyance of City-owned property to the applicant and HOME funding from the HUD, will result in the construction of 31 units of affordable

housing on four sites in the Harlem neighborhood of Manhattan. The New York City Department of Housing Preservation & Development (HPD) served as lead agency for the review and has issued a Negative Declaration for the project. Issues of concern for the environmental review included the identification of project commitments for certain of the four sites related to historic resources, hazardous materials, air quality, and building attenuation. As part of the mitigation of hazardous materials, AKRF conducted a Phase II investigation and prepared a RAP and CHASP.

AKRF prepared a Construction Protection Plan that was reviewed and approved by the New York City Landmarks Preservation Commission and the New York State Office of Parks, Recreation and Historic Preservation. This plan was implemented during construction to protect the Wadleigh Secondary School for the Performing and Visual Arts, a New York City Landmark that is also eligible for listing on the State and National Registers.

As Project Manager, Ms. Shapiro was responsible for managing all technical components of the hazardous materials portion of the project, communication with the regulatory agency and the Client, and managing the budget.

**Lambert Houses Redevelopment, Bronx, NY**

AKRF performed an Environmental Impact Statement (EIS) of the Lambert Houses affordable housing complex located in the West Farms section of the Bronx, NY. Lambert Houses consisted of multi-story apartment buildings, parking garage, and a multi-tenant retail/commercial building alongside the elevated NYC subway. AKRF also conducted a Phase I ESA with a vapor intrusion screen of the Property to satisfy U.S. Department of Housing and Urban Development (HUD)'s vapor intrusion requirements. The Phase I and vapor intrusion screens were prepared in accordance with ASTM E1527-05, ASTM E2600, and U.S. Environmental Protection Agency (EPA)'s All Appropriate Inquiry (AAI) rule. After completion of the EIS, an E-designation for hazardous materials was placed on the site. A subsurface investigation was conducted and a Remedial Action Work Plan (RAWP) was prepared under New York City Office of Environmental Remediation (OER) oversight. The site was subsequently entered in the NYC Voluntary Cleanup Program. AKRF is in the midst of implementing the RAWP, which includes remediation of a hydraulic oil spill.

Ms. Shapiro was responsible for managing all technical components of the hazardous materials portion of the project, communication with the regulatory agency and the Client, and managing the budget.

**New York City Office of Environmental Remediation, Second Farms, Bronx, NY**

AKRF, Inc. was initially contracted by the New York City Office of Environmental Remediation (NYCOER) to conduct a subsurface investigation of a 1.12-acre parcel in the Bronx, New York under the United States Environmental Protection Agency (USEPA) Brownfield Assessment Grant program. The investigation included a geophysical survey and utility mark-outs, and the collection and analysis of soil, groundwater, soil vapor, indoor air and ambient air samples. AKRF continued working on the project for the developer by preparing a Remedial Action Plan and Environmental Assessment Statement. AKRF is in the midst of implementing the remedy.

As Project Manager, Ms. Shapiro was responsible for managing all technical components of the project, communication with OER, NYCDEP, and the Client, and managing the budget.

**3301 Atlantic Avenue, Brooklyn, NY**

AKRF was retained to provide environmental consulting services in connection with the purchase and redevelopment of former burned manufacturing buildings encompassing an entire city block in Brooklyn, New York. As part of due diligence, AKRF prepared a Phase I Environmental Site Assessment (ESA) Report for the property. After acquisition, the property was divided into three separate sites (3264 Fulton Street, 235 Chestnut Street, and 3301 Atlantic Avenue).

AKRF prepared a Subsurface (Phase II) Investigation Work Plans and conducted Phase IIs at each of the sites, which included the collection and analysis of soil, soil vapor, and groundwater samples. Based on the results of the Phase IIs, which were documented in Subsurface (Phase II) Reports, New York State Brownfield Cleanup Program (NYSBCP) applications were prepared for each of the sites. After acceptance into the NYSBCP, AKRF prepared Citizen Participation Plans (CPPs) and distributed public notices. AKRF prepared Remedial Investigation (RI) Work Plans (RIWPs) and implemented numerous Remediation Investigations for each of the sites to further investigate contaminated media at the site prior to redevelopment, and prepared the RI Reports (RIRs). AKRF is in the midst of preparing Interim Remedial Work Plans for each Site, which include installation of a Soil Vapor Extraction to prevent the off-site migration of contaminants.

As Project Manager, Ms. Shapiro was responsible for managing all technical components of the project, communication with NYSDEC and the Client, and managing the budget.

**Atlantic Chestnut Lots 1, 2 & 3, Brooklyn, NY**

AKRF was retained to provide environmental consulting services in connection with the purchase and redevelopment of former burned manufacturing buildings encompassing an entire city block in Brooklyn, New York. As part of due diligence, AKRF prepared a Phase I Environmental Site Assessment (ESA) Report for the property. After acquisition, the property was divided into three separate sites (3264 Fulton Street, 235 Chestnut Street, and 3301 Atlantic Avenue). AKRF prepared a Subsurface (Phase II) Investigation Work Plans and conducted Phase IIs at each of the sites, which included the collection and analysis of soil, soil vapor, and groundwater samples. Based on the results of the Phase IIs, which were documented in Subsurface (Phase II) Reports, New York State Brownfield Cleanup Program (NYSBCP) applications were prepared for each of the sites. After acceptance into the NYSBCP, AKRF prepared Citizen Participation Plans (CPPs) and distributed public notices. AKRF prepared Remedial Investigation (RI) Work Plans (RIWPs) for each of the sites to further investigate contaminated media prior to redevelopment, conducted the RIs, and is in the process of preparing the RI Reports (RIRs).

As Project Manager, Ms. Shapiro was responsible for managing all technical components of the project, communication with NYSDEC and the Client, and managing the budget.

# Ashutosh Sharma

**Senior Technical Director**

Ashutosh Sharma is an Environmental Scientist with over 15 years of experience in the environmental consulting field. He has managed and implemented investigations and remedial measures for various properties, including those under different regulatory programs such as the New York State Department of Environmental Conservation's (NYSDEC) Voluntary Cleanup Program and Brownfield Cleanup Program, New York State's Spill Response Program, the Mayor's Office of Environmental Remediation (OER) E-Designation Program. Mr. Sharma has extensive experience in Phase I and Phase II (subsurface) site assessment and remedial investigation, remediation and cleanup of contaminated sites, and construction oversight. He has experience with subsurface soil, groundwater and sub-slab air/vapor sampling procedures, coordinating and running Community Air Monitoring Plans (CAMP) and is familiar with relevant United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and New York City Department of Environmental Protection (NYCDEP) environmental laws and regulations.

## Background

**Education**

M.S., Environmental Science, New Jersey Institute of Technology, 2007
B.Tech, Dr. B.R. Ambedkar National Institute of Technology, India, 2005

**Years of Experience**

Year started in industry: 2007
Year started in company: 2007

## Relevant Experience

**New York City School Construction Authority: On Call Environmental Consulting**
Under an on-call contract, AKRF provides the New York City School Construction Authority (NYCSCA) with hazardous materials consulting services. Mr. Sharma has provided assistance with various environmental assessment tasks including Phase II (Subsurface) Environmental Site Investigations (soil, groundwater and soil gas investigations); Indoor Air Quality (IAQ) and Vapor Intrusion (VI) Assessments; and Underground Storage Tank (UST) investigations. He evaluates the results of the investigations in the context of applicable environmental regulations to assist the project manager and/or project engineer in developing recommendations for remedial actions. Mr. Sharma also provided assistance with the lead in drinking water and plumbing disinfection tasks under the current on-call contract. AKRF also oversees plumbing disinfection work, which is required prior to new plumbing being placed into service. The assignments involve reviewing and commenting on disinfection plans, supervision of the disinfection and confirmation testing, and preparation of reports documenting the work was conducted in accordance with the specifications and applicable requirements. Due to the sensitivity of school sites, work under this contract is often conducted on short notice and during non-school hours.

**RXR Realty, NY: Multiple Projects**

AKRF has worked with RXR Realty on multiple projects and provided services for completion of Phase I Environmental Site Assessments (ESAs), implemented Phase II Environmental Site Investigations (ESI) and soil waste characterization sampling. Mr. Sharma acted as project manager, overseeing field personnel

implementing the Phase I ESA site reconnaissance the subsurface investigations, as well as completing reports for delivery to the client.

**Larkin Plaza, Yonkers, NY**

RXR SoYo Exalta LLC enrolled in the New York State Brownfield Cleanup Program (NYS BCP) to investigate and remediate the property located at 25 Warburton Avenue in Yonkers, NY. Mr. Sharma assisted the client in preparing the application to enroll the site in the NYS BCP program.. Mr. Sharma acted as the project manager for the project and prepared the Remedial Investigation Work Plan (RIWP). the Remedial Investigation Report (RIR), the Interim Remedial Measure Work Plan (IRMWP), the Remedial Action Work Plan (RAWP), the Interim Remedial Measures Construction Completion Report and the Site Management Plan (SMP) for the BCP site. Mr. Sharma also managed the field implementation of the remedial investigation and site cleanup activities during the development. Mr. Sharma maintained constant communication with the NYS Department of Environmental Conservation (NYSDEC) project manager and the client during the site redevelopment.

**810 Fulton Street, Brooklyn, NY**

RXR 810 Fulton Owner LLC developed the property located at 810 Fulton Street in Brooklyn. Mr. Sharma acted as project manager, overseeing field personnel implementing the requirements of the NYC Office of Environmental Remediation (OER)-approved Remedial Action Plan (RAP). Mr. Sharma also coordinated with the OER on behalf of the client on the day to day activities during the remedial action. Mr. Sharma also completed reports for delivery to the client and OER.

**Lambert Houses, Bronx, NY**

988 East 180th Street Housing Development Fund Corporation enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate the property located at 988 East 180th Street in the Bronx. Mr. Sharma acted as the deputy project manager overseeing field personnel implementing the construction oversight during site redevelopment, and coordinated with the client and their subcontractors. Mr. Sharma prepared the spill investigation work plan, coordinated spill cleanup and prepared the spill closure report to address the petroleum spill encountered during site redevelopment.

**Melrose Commons Site C, Bronx, NY**

The Bridge Inc. enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate the property located at 988 East 18th Street in the Bronx. Mr. Sharma acted as the deputy project manager overseeing field personnel implementing the construction oversight during site redevelopment, and coordinated with the client and their subcontractors. Mr. Sharma prepared the remedial closure report for delivery to the client.

**Essex Crossing Sites 1, 2, 3, 4, 5, 6, and 8, Manhattan, NY**

AKRF provided various services during the redevelopment of the Essex Crossing sites in the lower east of Manhattan. Mr. Sharma acted as the deputy project manager overseeing field personnel implementing the construction oversight during site redevelopment, and coordinated with the client and their subcontractors. Mr. Sharma also coordinated spill cleanups and prepared the spill closure reports to address the multiple petroleum spills encountered during redevelopment. Mr. Sharma also coordinated with the client and the New York City Department of Housing & Preservation (HPD) during the implementation of the NYC Department of Environmental Protection (DEP)-approved Remedial Action Plan (RAP). Mr. Sharma also completed reports for delivery to the client.

**NYU Langone Medical Center (NYULMC) – Kimmel Pavilion, New York, NY**

New York University Langone Medical Center enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate the property located at 424 East 34th Street in Manhattan. The proposed development consisted of a new medical facility. Mr. Sharma acted as the deputy project manager overseeing field personnel implementing the construction oversight during site redevelopment, and coordinated with the client and their subcontractors.

**551 Tenth Avenue, New York, NY**

Extell 4110 LLC enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate the property located at 547-551 Tenth Avenue in Manhattan. The property was developed with a 52-story residential building with one sub-grade level. Mr. Sharma provided construction oversight during site excavation, spill remediation, coordination and management of soil removal and fill material imports, oversight of the on-site air monitoring program, identification and proper management of contamination encountered during excavation work, and maintenance of critical paperwork and preparation of the final closure report.

**Zerega Avenue – Phase I, Phase II and Wetland Survey, Bronx, NY**

AKRF was contracted by EDC to conduct perform environmental services at an approximately 255,000-square foot project area located at 530 to 590 Zerega Avenue, Bronx, New York. The work included a Phase I Environmental Site Assessment (ESA), and Phase II Environmental Site Investigation which included preparation of a site-specific health and safety plan, a geophysical survey and utility mark-outs, and the collection and analysis of soil, groundwater, soil vapor, indoor air and ambient air samples. Mr. Sharma provided assistance with subsurface soil, groundwater and soil gas investigation as part of the Phase II investigation of the project site.

**Rego Park Home Depot, Queens, NY**

Solvent contamination was encountered during retail development of a former industrial property in Rego Park, Queens, New York. The site work included an extensive investigation and a multi-phase remediation performed under the NYSDEC Voluntary Cleanup Program (BCP). Remediation included removal of aboveground and underground storage tanks (ASTs and USTs) and hotspot soil removal. An Air Sparging/Soil Vapor Extraction (AS/SVE) groundwater remediation system designed by AKRF was installed as part of the building construction. Continued remediation work included upgrading and expanding the AS/SVE system after the store was opened. AKRF prepared the Final Engineering Report and obtained closure with a Release and Covenant Not to Sue issued by NYSDEC in 2013. AKRF continues operations, maintenance, and monitoring under the NYSDEC-approved Site Management Plan. Mr. Sharma assisted with ongoing operation, maintenance and monitoring of the AS/SVE system.

**TF Cornerstone – 606 West 57th Street, New York, NY**

AKRF has been retained by TF Cornerstone to provide environmental services for the proposed redevelopment of a portion of the block bounded by Eleventh and Twelfth Avenues and West 56th and 57th Streets. The proposed actions include a zoning map amendment, zoning text amendments, a special permit, and an authorization to facilitate development of approximately 1.2 million square feet of residential and retail space. AKRF is currently preparing an Environmental Impact Statement (EIS) for the New York City Department of City Planning (DCP) to analyze the effects of the proposed actions and development of the proposed building. The EIS will address the full range of environmental impacts associated with the proposed development. As part of the project's review, AKRF also prepared documents and graphics submitted to DCP under its Blue PRint program, a pre-application process that presents basic project information to DCP and clarifies major issues prior to the filing of a land use- or zoning-related application. The process is intended to standardize the pre-application process and expedite DCP's overall project review. Mr. Sharma also provided contractor oversight for the spill remediation activities as requested by the NYSDEC.

**Whitney Museum of American Art, NY**

Mr. Sharma provided assistance with subsurface soil and groundwater investigation, construction oversight and soil disposal management during the remediation phase of the project. The project included the construction of an approximately 230,000-square foot museum building with one sub-grade level with exhibition galleries, administrative offices, accessory use (café and bookstore), storage space, and an approximately 4,000-square foot restaurant.

**Yankee Stadium Demolition, Bronx, NY**

The New York City Economic Development Corporation (NYCEDC) project included demolition of the old Yankee Stadium and construction of a ball field known as Heritage Field. Mr. Sharma provided air monitoring and remedial action plan (RAP) oversight during the demolition and soil disturbance work.

**East River Science Park, New York, NY**

The New York City Economic Development Corporation (NYCEDC) proposed to construct two seventeen-story buildings to serve as a biomedical research center. The space between the two towers included an elevated atrium and an outdoor plaza on top of a parking garage. Mr. Sharma provided construction oversight during site excavation, coordination and management of soil removal and fill material imports, oversight of the on-site air monitoring program, identification and proper management of contamination encountered during excavation work, and maintenance of critical paperwork and preparation of the final closure report.

**W 61st Street Site, NY**

Mr. Sharma provided assistance with construction oversight during site excavation activities and helped prepare the final closure report for the site which, as part of the Brownfield Cleanup Program (BCP), was slated for redevelopment as two residential buildings with a courtyard and a tennis court.

**164 Kent Avenue, Brooklyn, NY**

The project was a multi-phase development consisting of a large waterfront block in the Williamsburg Rezoning Area. The project site has been developed with a mixed-use residential-commercial high rise towers with an esplanade and a pier along the East River. AKRF provided acquisition and development support, including performing Phase I and II environmental site assessments, and preparation of Remedial Action Plans (RAPs) and Construction Health and Safety Plan (CHASPs) for approval by DEP and OER. AKRF provided assistance with construction oversight during soil handling activities and managing the Community Air Monitoring Plan (CAMP) activities. To date, closure reports have been prepared and occupancy achieved for three of the four buildings. Mr. Sharma provided construction oversight during soil handling activities and running the Community Air Monitoring Plan (CAMP).

**285 Jay Street, Brooklyn, NY**

Under contract with the Dormitory Authority of the State New York (DASNY), AKRF completed a Phase II Subsurface investigation at the site of a proposed CUNY educational building to satisfy New York City E-designation requirements. As part of the work AKRF performed at the site, Mr. Sharma conducted sub-surface soil and groundwater investigation work and coordinated with the driller and the property owner for successful completion of the work. Mr. Sharma prepared the remedial closure report for delivery to the client.

**MTA Long Island Railroad, East Side Access Project, New York, NY**

The Metropolitan Transportation Authority (MTA) sponsored the East Side Access project to connect the Long Island Railroad to the Grand Central Terminal, thereby allowing Long Island commuters direct access to the East Side of Manhattan. Mr. Sharma provided assistance with the execution of the Community Air Monitoring Plan (CAMP) at various locations during the construction phase.

**Adam Clayton Powell Jr. Boulevard, New York, NY**

AKRF performed a Phase II study to meet the requirements of the New York City Department of Environmental Protection (NYCDEP) and to determine whether subsurface conditions had been affected by the on-site and/or off-site petroleum storage tanks and to ascertain whether current or former on- or off-site activities had adversely affected the subject property. Mr. Sharma conducted sub-surface soil and groundwater investigation at the abandoned site slated for future development. He was responsible for coordinating with the driller and the property owner for successful completion of the work.

**L.A.B. Validation Corp., 14 West Point Drive, East Northport, New York 11731**

# Lori A. Beyer

**SUMMARY:** General Manager/Laboratory Director with a solid technical background combined with Management experience in environmental testing industry. Outstanding organizational, leadership, communication and technical skills. Customer focused, quality oriented professional with consistently high marks in customer/employee satisfaction.

## EXPERIENCE:

1998-Present L.A.B. Validation Corporation, 14 West Point Drive, East Northport, NY
**President**

- Perform Data Validation activities relating to laboratory generated Organic and Inorganic Environmental Data.

1998-Present American Analytical Laboratories, LLC. 56 Toledo Street, Farmingdale, NY
**Laboratory Director/Technical Director**

- Plan, direct and control the operation, development and implementation of programs for the entire laboratory in order to meet AAL's financial and operational performance standards.
- Ensures that all operations are in compliance with AAL's QA manual and other appropriate regulatory requirements.
- Actively maintains a safe and healthy working environmental that is demanded by local laws/regulations.
- Monitors and manages group's performance with respect to data quality, on time delivery, safety, analyst development/goal achievement and any other key performance indices.
- Reviews work for accuracy and completeness prior to release of results to customers.

1996-1998 Nytest Environmental, Inc. (NEI) Port Washington, New York
**General Manager**

- Responsible for controlling the operation of an 18,000 square foot facility to meet NEI's financial and operational performance standards.
- Management of 65 FTEs including Sales and Operations
- Ensure that all operations are in compliance with NEI's QA procedures
- Ensures that productivity indicators, staffing levels and other cost factors are held within established guidelines
- Maintains a quantified model of laboratory's capacity and uses this model as the basis for controlling the flow of work into and through the lab so as to ensure that customer requirements and lab's revenue and contribution targets are achieved.

1994-1996 Nytest Environmental, Inc. (NEI) Port Washington, New York
**Technical Project Manager**

- Responsible for the coordination and implementation of environmental testing programs requirements between NEI and their customers
- Supervise Customer Service Department
- Assist in the development of major proposals
- Complete management of all Federal and State Contracts and assigned commercial contracts
- Provide technical assistance to the customer, including data validation and interpretation
- Review and implement Project specific QAPP's.

1995-1996 Nytest Environmental, Inc. (NEI) Port Washington, New York
**Corporate QA/QC Officer**

- Responsible for the implementation of QA practices as required in the NJDEP and EPA Contracts
- Primary contact for NJDEP QA/QC issues including SOP preparation, review and approval
- Responsible for review, verification and adherence to the Contract requirements and NEI QA Plan

1992-1994 Nytest Environmental, Inc. (NEI) Port Washington, New York
**Data Review Manager**

- Responsible for the accurate compilation, review and delivery of analytical data to the company's customers. Directly and effectively supervised a department of 22 personnel.
- Managed activities of the data processing software including method development, form creation, and production
- Implement new protocol requirements for report and data management formats
- Maintained control of data storage/archival areas as EPA/CLP document control officer

1987-1991 Nytest Environmental, Inc. (NEI) Port Washington, New York
**Data Review Specialist**

- Responsible for the review of GC, GC/MS, Metals and Wet Chemistry data in accordance with regulatory requirements
- Proficient with USEPA, NYSDEC, NJDEP and NEESA requirements
- Review data generated in accordance with SW846, NYSDEC ASP, EPA/CLP and 40 CFR Methodologies

1986-1987 Nytest Environmental, Inc (NEI) Port Washington, New York
**GC/MS VOA Analyst**

## EDUCATION:

**1982-1985 State University of New York at Stony Brook, New York; BS Biology/Biochemistry**
**1981-1982 University of Delaware; Biology/Chemistry**
**5/91 Rutgers University; Mass Spectral Data Interpretation Course, GC/MS Training**
**8/92 Westchester Community College; Organic Data Validation Course**
**9/93 Westchester Community College; Inorganic Data Validation Course**

**APPENDIX B**
**NYSDOH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY FORM**

**NEW YORK STATE DEPARTMENT OF HEALTH**
**INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY**
**CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No._____

Purpose of Investigation_____

**1. OCCUPANT:**

**Interviewed: Y / N**

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

**2. OWNER OR LANDLORD:** (Check if same as occupant ___ )

**Interviewed: Y / N**

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

**3. BUILDING CHARACTERISTICS**

**Type of Building:** (Circle appropriate response)

| | | |
|---|---|---|
| Residential | School | Commercial/Multi-use |
| Industrial | Church | Other: _____ |

**If the property is residential, type?** (Circle appropriate response)

| | | |
|---|---|---|
| Ranch | 2-Family | 3-Family |
| Raised Ranch | Split Level | Colonial |
| Cape Cod | Contemporary | Mobile Home |
| Duplex | Apartment House | Townhouses/Condos |
| Modular | Log Home | Other:_____ |

**If multiple units, how many?** _____

**If the property is commercial, type?**

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

**Other characteristics:**

Number of floors_____ Building age_____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

## 4. AIRFLOW

**Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:**

Airflow between floors

_____

_____

_____

Airflow near source

_____

_____

_____

Outdoor air infiltration

_____

_____

_____

Infiltration into air ducts

_____

_____

_____

**5. BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

| | | | | |
|---|---|---|---|---|
| **a. Above grade construction:** | wood frame | concrete | stone | brick |
| **b. Basement type:** | full | crawlspace | slab | other _____ |
| **c. Basement floor:** | concrete | dirt | stone | other _____ |
| **d. Basement floor:** | uncovered | covered | covered with _____ | |
| **e. Concrete floor:** | unsealed | sealed | sealed with _____ | |
| **f. Foundation walls:** | poured | block | stone | other _____ |
| **g. Foundation walls:** | unsealed | sealed | sealed with _____ | |
| **h. The basement is:** | wet | damp | dry | moldy |
| **i. The basement is:** | finished | unfinished | partially finished | |
| **j. Sump present?** | Y / N | | | |
| **k. Water in sump?** | Y / N / not applicable | | | |

**Basement/Lowest level depth below grade:** _____(feet)

**Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)**

_____

_____

**6. HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

**Type of heating system(s) used in this building: (circle all that apply – note primary)**

| | | | |
|---|---|---|---|
| Hot air circulation | Heat pump | Hot water baseboard | |
| Space Heaters | Stream radiation | Radiant floor | |
| Electric baseboard | Wood stove | Outdoor wood boiler | Other _____ |

**The primary type of fuel used is**:

| | | |
|---|---|---|
| Natural Gas | Fuel Oil | Kerosene |
| Electric | Propane | Solar |
| Wood | Coal | |

**Domestic hot water tank fueled by:** _____

| | | | | |
|---|---|---|---|---|
| **Boiler/furnace located in:** | Basement | Outdoors | Main Floor | Other_____ |
| **Air conditioning:** | Central Air | Window units | Open Windows | None |

**Are there air distribution ducts present?** Y / N

**Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.**

_____

_____

_____

_____

## 7. OCCUPANCY

**Is basement/lowest level occupied?** Full-time Occasionally Seldom Almost Never

| **Level** | **General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)** |
|---|---|
| Basement | _____ |
| 1st Floor | _____ |
| 2nd Floor | _____ |
| 3rd Floor | _____ |
| 4th Floor | _____ |

## 8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

**a. Is there an attached garage?** Y / N

**b. Does the garage have a separate heating unit?** Y / N / NA

**c. Are petroleum-powered machines or vehicles stored in the garage** (e.g., lawnmower, atv, car) Y / N / NA Please specify_____

**d. Has the building ever had a fire?** Y / N When?_____

**e. Is a kerosene or unvented gas space heater present?** Y / N Where? _____

**f. Is there a workshop or hobby/craft area?** Y / N Where & Type? _____

**g. Is there smoking in the building?** Y / N How frequently? _____

**h. Have cleaning products been used recently?** Y / N When & Type? _____

**i. Have cosmetic products been used recently?** Y / N When & Type? _____

**j. Has painting/staining been done in the last 6 months?** Y / N Where & When? _____

**k. Is there new carpet, drapes or other textiles?** Y / N Where & When? _____

**l. Have air fresheners been used recently?** Y / N When & Type? _____

**m. Is there a kitchen exhaust fan?** Y / N If yes, where vented?_____

**n. Is there a bathroom exhaust fan?** Y / N If yes, where vented?_____

**o. Is there a clothes dryer?** Y / N If yes, is it vented outside? Y / N

**p. Has there been a pesticide application?** Y / N When & Type?_____

**Are there odors in the building?** Y / N
If yes, please describe: _____

**Do any of the building occupants use solvents at work?** Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

**Do any of the building occupants regularly use or work at a dry-cleaning service?** (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

**Is there a radon mitigation system for the building/structure?** Y / N Date of Installation: _____
**Is the system active or passive?** Active/Passive

**9. WATER AND SEWAGE**

| | | | | | |
|---|---|---|---|---|---|
| **Water Supply:** | Public Water | Drilled Well | Driven Well | Dug Well | Other: _____ |
| **Sewage Disposal:** | Public Sewer | Septic Tank | Leach Field | Dry Well | Other: _____ |

**10. RELOCATION INFORMATION (for oil spill residential emergency)**

**a. Provide reasons why relocation is recommended:** _____

**b. Residents choose to:** remain in home relocate to friends/family relocate to hotel/motel

**c. Responsibility for costs associated with reimbursement explained?** Y / N

**d. Relocation package provided and explained to residents?** Y / N

**11. FLOOR PLANS**

**Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.**

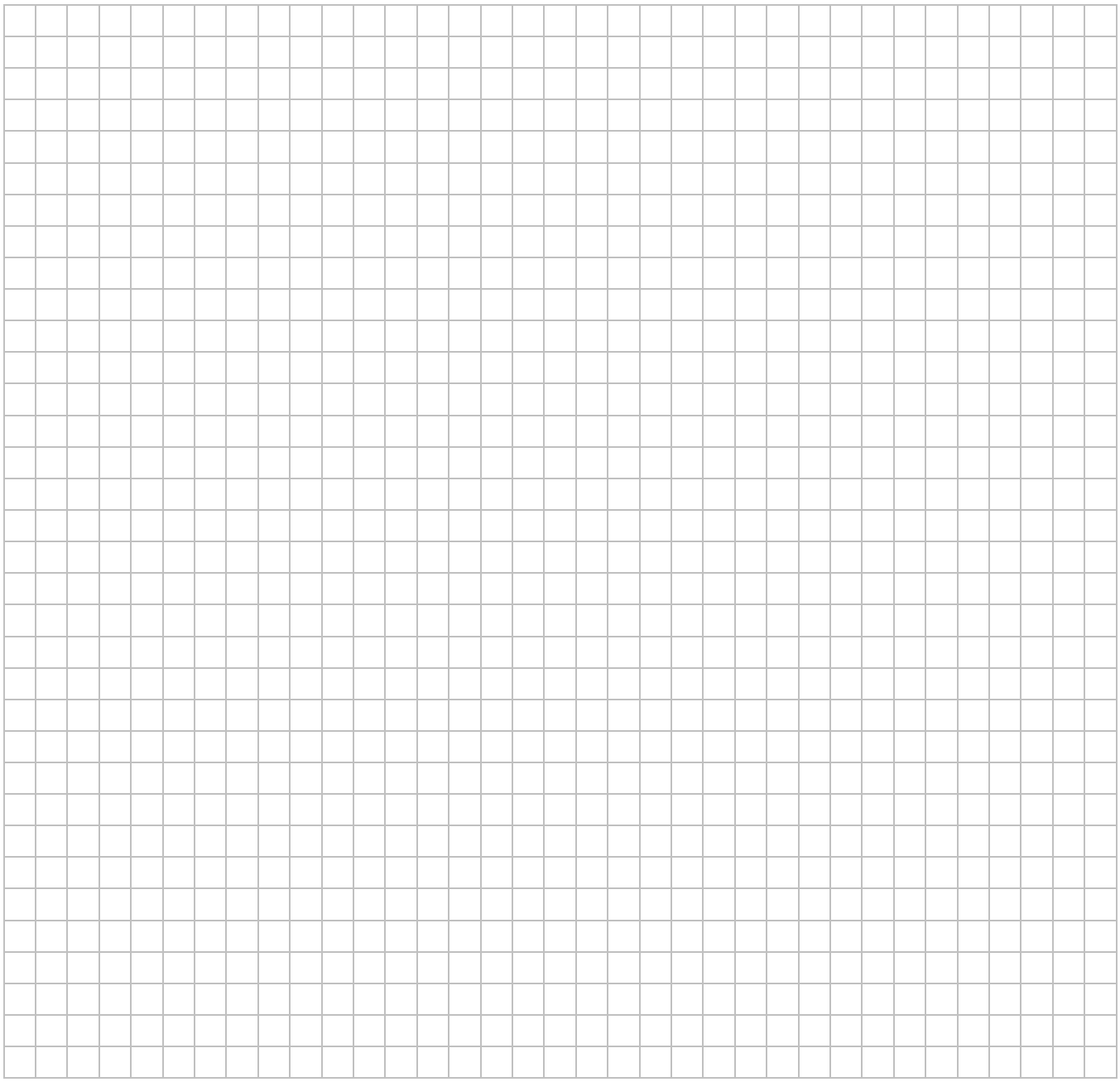
**Basement:**

**First Floor:**

**12. OUTDOOR PLOT**

**Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.**

**Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.**



**13. PRODUCT INVENTORY FORM**

**Make & Model of field instrument used: _____**

**List specific products found in the residence that have the potential to affect indoor air quality.**

| Location | Product Description | Size (units) | Condition* | Chemical Ingredients | Field Instrument Reading (units) | Photo ** Y / N |
|---|---|---|---|---|---|---|
| | | | | | | |
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* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.